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| OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | | |
| EXAMINER | | | | |
| BLOOM, NATHAN J | | | | |
| ART UNIT | | PAPER NUMBER | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/523,809

Applicant(s)

OHKAWA ET AL.

Examiner

NATHAN BLOOM

Art Unit

2624

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 34-82 is/are pending in the application.
- 4a) Of the above claim(s) 41-46, 54-59 and 68-82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 34-40, 47-53 and 60-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SI/003)
Paper No(s)/Mail Date 02/08/2005, 03/08/2006, 06/28/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application.
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and *Warmerdam*, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with *Warmerdam*, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim(s) 60-66 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 60-66 define a computer program embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally

interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized” – Guidelines Annex IV). That is, the scope of the presently claimed computer program can range from paper on which the program is written, to a program simply contemplated and memorized by a person. The examiner suggests amending the claim to embody the program on “computer-readable medium” or equivalent in order to make the claim statutory. Any amendment to the claim should be commensurate with its corresponding disclosure.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 34, 37, 47, 50, 60 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanioka (US 6118547) in view of Zakrzewski (US 2003/0215141).

Instant claim 34: An image data processing apparatus comprising:

an image data storing unit that stores image data; [*Tanioka teaches in column 4 lines 5-25, a CPU, ROM, and RAM that are used to process and store image data.*]

a spatial filter processing unit that applies spatial filter processing, in which a dynamic range for output is set wider than a dynamic range for input, to the image data stored in the image data storing unit; [*Tanioka teaches in column 3 lines 10-21 teaches a filtering process*

applied to the image that uniformly corrects the shading, but does not teach that this expands the dynamic range of the image. However, Zakrzewski has taught a method of gradation processing in which the dynamic range is increased by uniformly distributing luminance values (corrects shading) thus improving the dynamic range of the image (see paragraph 0075. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tanioka to uniformly distribute the intensity of the image utilizing a well known process as taught by Zakrzewski with a reasonable expectation for success.)]

a resolution increase processing unit that applies resolution conversion processing for converting a present resolution into a resolution higher than the present resolution to the image data after the spatial filter processing by the spatial filter processing unit; [*Tanioka has taught the conversion of the image resolution (pixel density) from 400 to 600 dpi in column 3 lines 30-35 (after the shading correction).*]

a gamma correction unit that applies gamma correction processing to the image data after the resolution conversion processing by the resolution increase processing unit; and a [*Tanioka has taught the gamma correction of the up-converted image in column 3 lines 35-45.*]

transmitting unit that sends the image data after the gamma correction processing by the gamma correction unit to an external apparatus. [*Tanioka column 4 lines 20-25.*]

Instant claim 37: The image data processing apparatus according to claim 34, further comprising a format converting unit that converts the image data to be sent by the transmitting unit into a general-purpose format that can be inspected in the external apparatus. [*Tanioka has taught (column 4 lines 20-25) both a display and printing apparatus as an external apparatus, but does*

not explicitly state that the image data is converted to a general purpose format for output (at which point it is inspected). However, it is inherent that the format of the image must be in a form such that it is able to be output to both a printer and a display, or else the image would not be able to be displayed or printed. Thus Spencer inherently has taught the conversion of the image into a format such that it can be displayed by both the printer and display apparatus.]

Instant claims 47, 50, 60, and 63: As per the rejection above Tanioka (lines 5-25 of column 4) in view of Zakrzewski have taught the apparatus (computer running stored program) and the corresponding method that it performs.

3. Claims 35-36, 48-49, and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanioka in view of Zakrzewski as applied to claim 34, and in further view of Natarajan (US 2002/0009145).

Instant claim 35: The image data processing apparatus according to claim 34, further comprising a resolution reduction processing unit that applies resolution conversion processing for converting a present pixel density into a pixel density lower than the present pixel density to the image data after the processing by the gamma correction unit. *[Tanioka in view of Zakrzewski have taught the processing and output of an image to an external device, but have not taught the resolution reduction prior after the gamma correction unit. However, Natarajan states in paragraph 0069 a well known process of reducing the resolution of an image to reduce the processing time and power (also reduces required bandwidth of image data as was well known*

in the art) of image processing steps proceeding the reduction of resolution. It would have been obvious to one of ordinary skill in the art to modify the teachings of Tanioka and Zakrzewski with the resolution reduction taught by Natarajan to reduce the processing time and power required to transmit the data.]

Instant claim 36: The image data processing apparatus according to claim 35, wherein the resolution reduction processing unit converts a resolution of the image data into a resolution before the resolution conversion processing by the resolution increase processing unit. *[As per the rejection above, it would have been obvious to reduce the resolution of the image data prior to image processing in order to reduce processing time and power as taught by Natarajan.]*

Instant claims 48-49 and 61-62: As per the rejection above Tanioka in view of Zakrzewski have taught the apparatus (computer running stored program) and the corresponding method that it performs.

4. Claims 38, 51, 64 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanioka in view of Zakrzewski as applied to claim 34, and in further view of Gove (US 5796442).

Instant claim 38: The image data processing apparatus according to claim 34, wherein the resolution increase processing unit performs the resolution conversion processing only for a main scanning direction. *[Tanioka in view of Zakrzewski has taught the increase of resolution, but*

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does not specify in how many directions the resolution has been increase (assumed 2-D).

However, it 1-D stretching (resolution increase) to fit a display medium was known to one of ordinary skill in the art at the time of the invention as is evidenced by column 3 lines 10-25 of Gove. Given that both Tanioka in view of Zakrzewski and Gove have taught the increase of image resolution and the display of the increased resolution image, it would have been obvious to one of ordinary skill in the art to try the 1-D resolution increase as taught by Gove to fit the image data to a display unit. Furthermore, one of ordinary skill in the art would have a reasonable expectation of success in combining these references to produce an image that fits a display in at least one direction.]

Instant claims 51 and 64: As per the rejection above Tanioka in view of Zakrzewski have taught the apparatus (computer running stored program) and the corresponding method that it performs.

5. Claims 39, 52, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanioka in view of Zakrzewski as applied to claim 34, and in further view of Callaway (US 2003/0090592).

Instant claim 39: The image data processing apparatus according to claim 34, wherein the resolution increase processing unit performs resolution conversion processing for converting a resolution into a resolution obtained by multiplying the present resolution by an integer equal to or larger than two. *[Tanioka in view of Zakrzewski has taught the resolution increase of the image (as an example) from 400dpi to 600dpi, but does not specify integer magnification of the*

image. However, Callaway has taught in paragraphs 0005 and 0027 the integer up-scaling of images (in order to upscale integer must be greater than 1 thus it must be 2 or greater) for display in order to prevent the introduction of artifacts from non-integer up-scaling techniques. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Tanioka and Zakrzewski to up-scale (increase resolution) by an integer amount as taught by Callaway to reduce noise and artifacts.]

Instant claims 52 and 65: As per the rejection above Tanioka in view of Zakrzewski have taught the apparatus (computer running stored program) and the corresponding method that it performs.

6. Claims 40, 53, and 66-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanioka in view of Zakrzewski as applied to claim 34, and in further view of Namizuka (US 2006/0098227).

Instant claim 40: The image data processing apparatus according to claim 34, wherein the resolution increase processing unit performs resolution conversion processing for converting image data with a resolution of 600 dpi into image data with a resolution of 1200 dpi. *[Tanioka gives an example of a conversion from 400dpi to 600 dpi, but does not exhaustively list the possibilities for dpi conversion. However, the increase of resolution (dpi) to a desired size in order to fit a display medium, or to make the image a standard image size was well known in the art at the time of the invention as is evidenced by Namizuka in paragraph 0113 (requires 600 to 1200 dpi conversion). It would have been obvious to one of ordinary skill in the art at the time*

of the invention to up-convert the resolution as taught by Tanioka in view of Zakrzewski from an input value to a desired output value such as 600 to 1200 dpi as evidenced by Namizuka in order to achieve the desired output resolution. Furthermore, one of ordinary skill in the art would have modified the teachings of Tanioka in view of Zakrzewski with the knowledge of one of ordinary skill in the art to achieve a wide range of conversion values with a reasonable expectation for success.]

Instant claims 53 and 66-67: As per the rejection above Tanioka in view of Zakrzewski have taught the apparatus (computer running stored program) and the corresponding method that it performs.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan Bloom whose telephone number is 571-272-9321. The examiner can normally be reached on Monday through Friday from 8:30 am to 5:00 pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mehta Bhavesh, can be reached on 571-272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

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system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NB

/Brian Q Le/

Primary Examiner, Art Unit 2624